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Secularization and Development In the Context of Africa

Whakeshum, Sisay Tolla

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Secularization and Development:

In the context of Africa

Thesis presented by

Sisay Tolla Whakeshum

Supervisor

Professor Fabio Mariani (UCL)

Tutor(s)

Doctor Stéphanie Weynants (UNamur)

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Abstract

Despite intense academic debates, empirical evidences on the interplay between secularization and development in the case of Africa are too scant. In this paper, using individual level data from Afrobarometer survey of 2016, cross-section estimations integrated with secularization hypotheses are presented to extend the inquiry. Country fixed-effect logistic regressions estimate the effects of fundamentals of development on secularization (that is measured by rare-attendance and non-membership). The cross-section analysis reveals a negative association between education and secularization. This result contradicts the conventional view that education is a leading source of the seismic social phenomenon of secularization. Estimation outcomes due to urbanization are different between rare-attendance and non-membership measures of secularization. Whereas urbanization is found to have a positive effect on non-membership type of secularization, this effect is negative for rare-attendance form of secularization. In contrast to education and urbanization, change in measures of income (the level of economic condition) is not significantly associated to changes in attendance of religious institutions. However, association between secularization and income appears when secularization is measured in terms of non-membership that tends to decrease with higher income. Generally, the findings cast doubt on traditional conception of secularization hypothesis.

Keywords: Secularization, Education, Income, Urbanization, Africa

1 Introduction

The expression secularization is derived from the Latin root *seaculum*, which was used by Augustine and the early religious leaders as a reflection for the temporal world.¹ Secularization defines the transformation of a society from close credentials with religious values and institutions on the way to non religious values and secular institutions. The term secularization is also used as reference to the historical process in which religion loses social and cultural importance. In general, secularization has multi-faceted natures that denote quite diverse stuffs among other aspects diminishing religious attendance, growing unbelief, weakening denominational distinctiveness, loss of trust in religious leaders, and the development of a religiously neutral state. As implied by Bailey (2012), a recognizable explanation from all of these seemingly different descriptions is that secularization in essence means decline of religion. Western Europe is the classic illustration of the secularization of society, underwent an intense process of secularization particularly in the late nineteenth and early twentieth century (McLeod 2000). Church and school, besides church and state, were separated; hence church lost its importance in the society. The main indicators of secularization, in particular reduced church attendance, have been noticeably increasing in Western Europe (Berger 1996). For instance, Becker and Woessmann (2013) found out that church attendance fell by 3.6 % per decade, on average, among Prussian counties between 1850 and 1931. Western Europe's secularization has been regarded as the reflection of the future of all societies - that the boost of modernity dooms religion. As Anthony F. C. Wallace (1966:265) described:

“The evolutionary future of religion is extinction. Belief in supernatural beings and supernatural forces that affect nature without obeying nature's laws will erode and become only an interesting historical memory.... Belief in supernatural powers is doomed to die out, all over the world, as the result of the increasing adequacy and diffusion of scientific knowledge”

Declined level of church attendance in many Western European nations is direct consequence of this link between modernity and religion.

¹ Pérez-Agote, A. (2010). Drawing the boundaries of its validity.

However, the very conception of secularization has been in question for the United States of America. Even though there is enormous popularity of science and the prevalence of higher education in the United States, religion shows no signs of turn down (Greeley 1989). Indeed, church membership rates are at an all-time high in the United States (Finke and Stark 1992). David Martin (1969:10) tried to explain the case of United States of America as “arrested development, whose evolution has been delayed.” Additionally, Wallis (1986) attributed the high levels of North American religiousness to ethnic and racial diversity. Despite heated academic debates, empirical evidence on the very concept of secularization in the case of Africa is too rare. In this paper, the researcher employed country-level cross-sectional data to estimate how relative economic development aspects such as education, urbanization and income affect religious participation and membership in Africa. Understanding the nature of religious features and changes is important for scheming long-run development endeavor of any society. For example, Galor (2011) pointed out that via shaping attitudes toward factors such as education, and religious orientation of the society can have vital effects for long run development.

Secularization hypotheses suggest economic development causes individuals to become less religious, as it can be manifested by reduced religious beliefs or attendance, and loss of conviction on religious membership. Economic development does not comprise a sole dimension for determining the wellbeing of creatures. It rather involves usual patterns of change in a number of socio-economic and political fundamentals. Amongst others high level of per capita income and education, urbanization, improved life expectancy, and lower levels of fertility are the key demonstrations of economic development. The center of this study is on the theme of the influence of better education, high income and urbanization toward religious attachment of individuals. Prominent scholars such as Hume (1757 [1993]) and Freud (1927 [1961]) pointed out that increased education might have been a most important source of secularization due to the fact that increased critical thinking may have reduced belief in supernatural forces or spirit world. Marx (1844) provided a tip about religion as “opium of the people” that is mandatory only to lighten the complaint of poor economic conditions. Furthermore, urbanization can make religious participation to have higher opportunity cost due to alternative time uses such as museums and theaters (McCleary and Barro 2006). However, it is unclear how these secularization hypotheses fit to the context of African countries.

To present empirical evidence from African countries setting of secularization makeup, this study arranged a cross-sectional dataset on education, income, urbanization, and religious participation and membership from Afrobarometer research network for the year 2016. This cross-sectional dataset assents the researcher to estimate country fixed-effect logistic regressions.

In the cross-sectional fixed effects models, the result showed that higher education level is significantly related to an increase in religious attendance and membership. The significant negative effect of urbanization on rare attendance form of secularization is also confirmed in the country fixed effect logistic regression model. This estimate is in strong contrast to the alternative measure of secularization, which indicates a positive association between urbanization and non- membership. As compared to education and urbanization, a change in measures of income (economic condition) as another facet of development is not significantly related to changes in attendance or participation in religious institutions.

Succeeding, in section 2 we offer a theoretical structure of secularization and development (the role of development in secularization), and empirical reviews. Sections 3 and 4 provide data and empirical model. Section 5 describes basic results and robustness check. Section 6 concludes. Lastly, section 7 presents limitations and future work.

2 The Role of Development in Secularization

The discussion about the theoretical structure of secularization and its relationship with education, urbanization and income is to frame the empirical analysis of this study. Then it is followed by a summary of the available empirical evidences on the relationship between constituents of development and secularization.

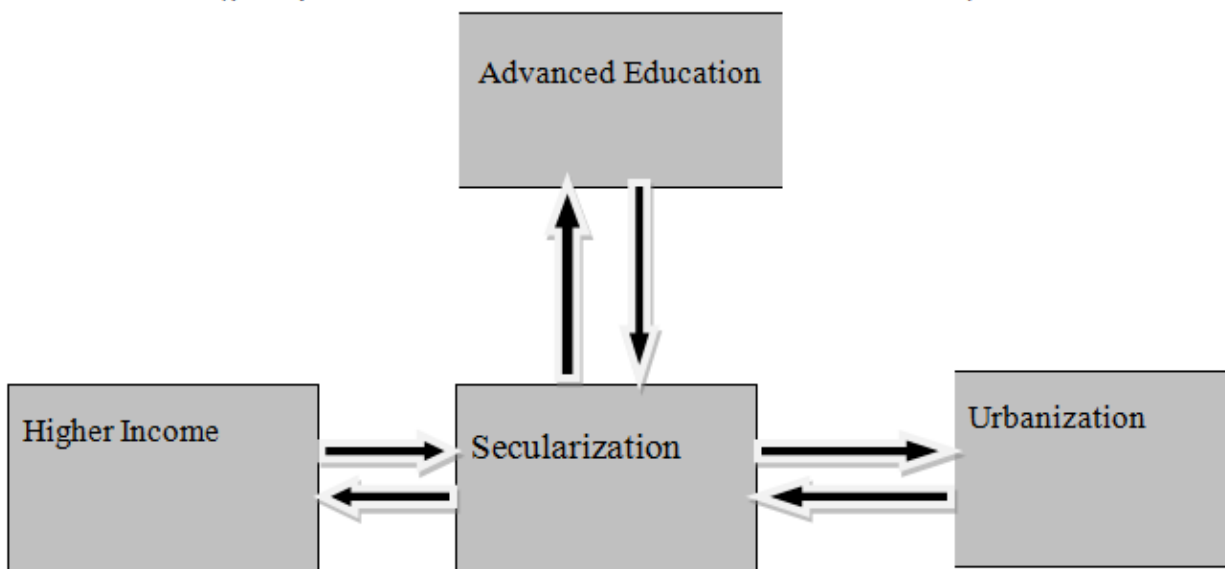
2.1 Theoretical Structure of Secularization and Development

The religion-market model and secularization hypothesis of religiosity theories are important thesis bring to light the fact that diverse dimensions of modernization may have differing weight or relevance for religious participation and affiliation.

According to the religion-market model of religiosity or a supply-side theory, religiosity is determined by the existence of a state religion, regulation of the religion market, and the extent

of religious diversity². This approach focuses on supply part effects such as competition among religion providers for determining religiosity of the given society rather than the role of demand factors like economic development for dealing with secularization. A greater variety of religions existing in a given region is considered to encourage greater competition, therefore, a better quality religion product and service, consequently lessen levels of secularization. Moreover, the degree of religious mixture and competition can be affected by government regulation of religious market. For instance, the existence of an established state church is presumed as one source of a low degree of religious diversity and, as a result, low participation in religious institutions.

Figure 1, Theoretical Framework of Secularization and Development



Pertaining to secularization hypothesis or a demand-side theory which is the focus of this study, various aspect of development or modernization can cause individuals to become less religious or secular that can be measured by religious participation and belongingness. A demand-side theory (notice McCleary and Barro 2006) underline the fact that different dimensions of

² Despite the fact that hub of this study's analysis toward testing of "demand-side" secularization hypotheses, there are crucial evidences that elements of "religion-market" or "supply-side" model of religiosity provide for understanding secularization. Important contributions include McCleary and Barro (2006), and Stark and Iannaccone (1994).

modernization or development may have differing relevance for religious participation and belongingness.

According to Sen (1999) among many other prominent scholars, development can be seen as a course of expanding the real freedoms that people enjoy. Rise in personal incomes, industrialization or technological advancement, social modernization, better education and health, urbanization, liberty to participate in public discussion and inquiry can considerably contribute to enhance human freedom. Therefore, development is a multi-dimensional and process in which a society is being improved in the sector of social, political, and economic welfare. Moreover, for comprehensive investigation of the source of secularization, the effect of development on religiosity depends on the specific facet of modernity. Income, education and urbanization are key aspects of development that have been drawn as a momentous features affecting secularization and even freedom that people benefit from (figure 1).

Regarding income aspect of development, improved income or material conditions may condenses demand for religious relief and hence reduce attendance of religious clubs. This argument is supported by the statement of Marx (1844) with reference to religion as “opium of the people” that is necessary to alleviate the complaint of poor economic status.³

On the subject of urbanization, it can lead to a reduced interest in attending religious organizations as urban areas come with higher opportunity cost of religious participation or partaking. Cities proffer numerous alternative time uses such as theaters and museums (McCleary and Barro 2006).

In addition to income and urbanization, education has been articulated as a separate dimension of development determining secularization. Increased education may have been a principal source of demand-induced secularization by fostering critical thinking that can oppose the established religious institutions and beliefs. Even psychological literatures conclude that, though religiosity comes natural at early age, rational or cogent reflection can lessen religiosity (Kapogiannis et al. 2009; Shenhav et al. 2012).

³ Marx, K. (1844). Zur Kritik der Hegel'schen Rechtsphilosophie: Einleitung. In R. Arnold & M. Karl (Eds.), *Deutsch-Französische Jahrbücher* (pp. 71–85). Paris: Bureau der Jahrbücher.

Alternatively, secularization can be a cause of development which is represented in terms of higher income, better education and urbanization (Fig 1). Based on the work of Strulik (2016), a secular personality lets a person to derive more satisfaction or gratification from material possessions and consumption than religious persons, dictating secular individuals to study and work harder and to save more so as to experience this satisfaction from consumption and material possession. As a result of education and hard work, increasing labor supply and capital accumulation induces technological progress, income growth and urbanization, which attracts further individuals to dump religion in order to derive more gratification from material possessions and consumption. Moreover, higher income, advanced education and urbanization make consumption more affordable and increase the demand of a secular trait for the subsequently generations. Consumption-induced increase of education, labor supply and savings can make secularization a cause of development.

2.2 Empirical Evidences on Development and Secularization

Verification for secularization comes predominantly from advanced societies such as West European countries. According to the European Values Survey, West-European churches lure fewer attendants every year. In the UK, for example, it has been predicted that church presence would shrink by 55% from 1980 to 2020 (Brierley 1998). In Finland, the proportion of people who in no way attended church enlarged from 15% in 1981 to 28% in 2000 (World Values Survey 2006). Nearly all clued-up investigators such as Barro and McCleary (2002) and Bruce (2002), would concur that these transformations happened fundamentally due to elements of development such as industrialization and urbanization. In spite of severe academic reflections about secularization, empirical confirmation on the sources of secularization is scant. The existing evidences, which are by and large cross-sectional, have been mixed and far from conclusive.

In cross-country analyses, McCleary and Barro (2006) disclose that per-capita GDP adversely estimates religious participation and that economic growth associates negatively to church attendance or presence. Additionally, in cross-country analyses, Paldam and Gundlach (2013) and Herzer and Strulik (2016) corroborate a negative effect of income on religiosity. Similarly, using U.S. state-level data, Lipford and Tollison (2003) found out an adverse effect of income on church membership. Whereas, at the micro-level data, Guiso, Sapienza, and Zingales (2003)

reveal that religious beliefs are positively allied with economic attitudes. On the other hand, unlike McCleary and Barro (2006), Bettendorf and Dijkgraaf (2010), and Deaton (2011) found adverse associations of education with pointers of religiosity in cross-country analyses. According to Becker, Naglers and Woessmann (2017), using city-level data from Germany's secularization period (1890–1930), the cross-section result shows insignificant association between urbanization and church attendance, but entails positive and significant connection between education and church attendance. Generally, Iannaccone (1998) recapitulates the literature as follows: “In several analyses of cross-sectional survey data, rates of religious activity lean not to decline with income, and most rates amplify with education.”

However, it is ambiguous to what degree the existing cross-sectional detections suffer from omitted-variable bias that related to development entities and secularization. Brown and Taylor (2007) found a direct or positive association among education and church attendance in fixed effect panel regressions taking into account individual-level data from the British National Child Development Study. Becker and Woessmann (2013) studied the interaction between church attendance and income in a panel of Prussian counties between 1886 and 1911. And the researchers found that the association disappears in panel analyses once; county fixed effects are controlled, first-differenced models are counted, panel models with time and county fixed effects considered, and panel Granger-causality tests applied. Similarly, in contrast to education which is negatively related to church attendance, changes in measures of income (income tax, municipal tax) and urbanization (city population) as another dimensions of development are not significantly associated to changes in church attendance in panel models where fixed effects portrayed for time-invariant unobserved heterogeneity (Becker, Naglers and Woessmann 2017).

3 Data

The data used for the empirical analysis were drawn from a survey of Afrobarometer which is an ongoing endeavor committed to cross-country research on national attitude in African countries and is Africa's premier public opinion assessment organization.⁴ The survey is held in a large

⁴ Afrobarometer, as the name implies, is non-partisan, a pan-African research network that conducts public attitude surveys on economic condition, governance, democracy, and associated concerns in more than 35 African countries. Data are downloadable from <http://www.afrobarometer.org/data>

number of African countries in six rounds. This study used the round 6 data (2016) which is the latest one among the accessible data for use.⁵ The survey provides information on individual socio-economic characteristics such as the age, gender, place of resident, education level and economic conditions.⁶ Also data are available for a wide variety of religious measures and respondent characteristics.

4 Empirical Model

Religion in Africa is multifaceted and has been a foremost influence on the issue of art, culture and philosophy. The continent's vast majority of people are adherents of the world's two largest religions, Christianity and Islam. In spite of the domination of Christianity and Islam, traditional African religious practices and faith in sacrifices to ancestors, witchcraft, traditional religious healers and re-embodiment have not vanished. Rather, traditional religious exercises coexist with Islam and Christianity (Lugo and Cooperman 2010). While it is hard to observe alterations in religious beliefs in the African context, variation in religious participation and membership itself has important societal connotations.

Following the literature review discussed this research paper center on the effect of development on secularization. The study primarily analyses of the effect of income, urbanization and education on secularization. Unlike the majority of studies on the topic of secularization, this research paper provides alternative descriptions of secularization for African countries using frequency of attendance of religious service and religious institutions membership status as

⁵ Round 6 data are from the following countries: Algeria, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Côte d'Ivoire, Egypt, Gabon, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, São Tomé and Príncipe, Senegal, Sierra Leone, South Africa, South Sudan, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.

⁶ Afrobarometer doesn't have any information about the amount of revenue or expenditure of the respondents.

proxy for religiousness and/or being secular.⁷ The study considered minimum frequency of religious practice and membership status as objective measures of secularization. To do so, secularization is measured using two indicators;

$$SS1 = \begin{cases} 1, & \text{if individual is attending religious service less than once per a week (secular)} \\ 0, & \text{otherwise} \end{cases}$$

And

$$SS2 = \begin{cases} 1, & \text{if individual is non – member of any religious institution (secular)} \\ 0, & \text{otherwise} \end{cases}$$

Where, *SS1 and SS2* denote Secular Status.

The dependent variable, that reflects the topic of this study which is secularization, is a dichotomous variable that received the value of 1 for a ‘secular’ respondent (defined above) and 0 otherwise.

To analyze whether the result of the study depends on the choice of the religious variable and to assess religiosity or secularization suitably in an inclusive approach, the researcher employed both membership and practice measures of secularization. The advantage of attendance and membership measure is that it is quantifiable and objective. Obviously, reduced attendance or being non-member of any religious institutions does not necessarily reflect a reduction in “religiosity” in the common sense of inner stance towards belief in God. It is in this manner that this paper uses the word “secularization”.

A logistic regression model is applied to estimate how relative economic development aspects such as education, urbanization and income affect secularization or religiosity in terms of participation and membership. In the logit model, we estimate the probability to be secular thanks to different independent variables like age, gender, economic condition, place of residence, level of education, support for democracy and religion denominations. Regression

⁷ The religious rules of worshippers rarely vary between religions (e.g., many conventional Jews can congregate once a day, while Christians and Muslim expected to attend religious service at least once a week).

analysis is used for the inference of the probability to be secular, or it is to estimate the effects of the various explanatory variables on secularization (that is measured by rare-attendance and non-membership of religious organizations), provides support to corollaries derived from the theoretical framework.

5 Results

In section 5.1 and 5.2, the research paper discusses socio-economic attributes with respect to secularization and country-fixed effect regressions findings, correspondingly.

5.1 Socio-economic Characteristics and Secularization

Pooling the data for the 36 countries, table 1 provides the characteristics of individuals applied for the estimation of factor affecting secularization in the context of Africa.

Table 1 Individual Characteristic, Afrobarometer (2016)

| | | Measures of Secularization | |
|-----------------------|--------------------------|-----------------------------|----------------------------|
| | | Secular (rare practice) (%) | Secular (not a member) (%) |
| Gender | Female | 23 | 51.2 |
| | Male | 29.3 | 53.2 |
| Age | 18-25 | 27.2 | 54.6 |
| | 26-45 | 25.8 | 51.9 |
| | 46-65 | 24.6 | 50.5 |
| | Over 65 | 29.8 | 49.7 |
| Education | No Formal Education | 24.5 | 56.8 |
| | Primary Education | 28.2 | 50.4 |
| | Secondary Education | 25.4 | 50.2 |
| | Post Secondary Education | 25.7 | 54.4 |
| Place of Residence | Urban | 26 | 56.1 |
| | Rural | 26.3 | 49.4 |
| Economic Condition | Bad | 25.7 | 50.7 |
| | Intermediate | 29.2 | 53.6 |
| | Good | 24.8 | 53.3 |
| Support for Democracy | No | 31.7 | 56.9 |
| | Neutral | 29.2 | 51.3 |
| | Yes | 24.1 | 51.6 |
| Religion | Christian | 24.7 | 42.7 |
| | Muslim | 18.5 | 64.3 |
| | Others | 58.1 | 64.8 |
| Total Secular (%) | | 26.1 | 52.2 |

Source: Own Computation, Afrobarometer Dataset. 2019

The characteristics of the rare-attendance type of secularization are comparable to that of non-member structure of secularization in many ways. At the time of the survey, as it can be seen from the above table, 23% of female and 29.3% of male, as well as 51.2% of female and 53.2% of male were ‘secular’ in view of rare-practice (attendance) and non-member aspects of

secularization, respectively. Evaluating the distribution of secularization figures in the age categories, over group, changes were almost similar for both dimensions of secularization, decreasing from the age group of 18-25 through 46-65. Relatively, over 65 age or retired are more secular in the form of rare attendance than others.

For the case of education, defining secular trait as rare-attendance, the proportion of secular individuals stood at 24.5% for those with no formal education, 28.2% for primary education completed, 25.4% for high school graduated and 25.7% for post high school group. Whereas, taking into account non-membership makeup of secular attribute, the figures were 56.8%, 50.4%, 50.2% and 54.4% for the aforementioned matching educational categories, implying there is irregular trend of secularization among the given categories of education. The fraction of rare attendant (secular) among rural and urban dwellers is hardly differ, 26% and 26.3% for urban and rural residents, respectively. This figure is fairly unusual given that substitute measure of secularization found out that 56.1% of urban and 49.4% of rural residents are non-members of any religious institutions (table 1). Although there is no direct income information from Afrobarometer dataset, information about the economic situation of the given individuals is available. The distributions of share changes of secular entity over the non-member and rare-attendant measures of secularization are quite corresponding.

The classical theory of secularization posits that since democracy is one of the most fundamental components of a modern society, democracy directs to secularization. However, table 1 showed the existence of higher tendency in opposition to democracy among either secular group. Comparing the percentage of self claim religious individuals who do seldom or never attend services, Muslims have a highest participation rate or lower secular characteristic compared to Christian and Others. However, the level being a member of religious institutions amongst Muslims is lower than that of Christians. In general, even if attendance and membership are the key ingredients to measure secularization or religiosity, the proportion of secular group in the form of rare attendant is exactly half of the prearranged substitute measure of secularization (Table 1).

5.2 Estimation Results

Table 2 presents country fixed-effects logistic regressions for two alternative dependent variables of secularization: (i) low frequency of attendance; and (ii) being non-member of any religious denominations. The fixed-effects regression, that includes country effects, is applied to correct for country specific features.

Table 2 Country Fixed-Effects Logistic Secularization Regressions (Reporting Coefficients)

| Explanatory Variables | Dependent Variables | |
|------------------------------|----------------------|----------------------|
| | Rare- Attendance | Being Non-Member |
| Gender | | |
| Male | .409246 (0.000) | .0948543 (0.000) |
| Age | | |
| 18-25 | Reference | Reference |
| 26-65 | -.1239531 (0.000) | -.2560897 (0.000) |
| over 65 | -.1483586 (0.006) | -.4431767 (0.000) |
| Education | | |
| No Formal Education | Reference | Reference |
| Primary Education | -.1884976 (0.000) | -.0363577 (0.246) |
| Secondary Education | -.3420188 (0.000) | -.1048149 (0.001) |
| Post Secondary Education | -.289192 (0.000) | -.1745019 (0.000) |
| Urbanization | | |
| Urban | -.128395 (0.000) | .2553317 (0.000) |
| Economic Condition | | |
| Bad | Reference | Reference |
| Intermediate | .0197625 (0.497) | -.0374919 (0.151) |
| Good | .0132876 (0.611) | -.129934 (0.000) |
| Support for Democracy | | |
| No | Reference | Reference |
| Neutral | -.0638169 (0.089) | -.058949 (0.092) |
| Yes | -.2318551 (0.000) | -.0962003 (0.002) |
| Religion | | |
| Christian | Reference | Reference |
| Muslims | -.3126087 (0.000) | .4308255 (0.000) |
| Others | 1.663047 (0.000) | .84358 (0.000) |
| _cons | -.4448744 (0.000) | 1.459757 (0.000) |
| Number of Observation | 52596 | 53798 |
| Prob > chi2 | 0.0000 | 0.0000 |

1. p-values (significance levels) in parentheses.
2. Stata 13 was used for estimation of country Fixed-Effects Logistic regressions.

For this study purpose, attendance and membership are two dimensions of religiosity considered for the analysis of secularization. The figures that are associated to the explanatory variables are the raw coefficients of the Logit regression that maximizes the logarithm of the likelihood function. The coefficient of the Logit regression illustrates the effect of the explanatory variable on the logit (or log-odds) of the dependent variable. A negative raw coefficient of the Logit regression implies adverse relationship between the explanatory variable under discussion and the likelihood or odds of secularization. On the contrary, a positive coefficient of the Logit regression means that the prospect of secularization is positively related to the significant explanatory variables.

As it is evident from Table 2, the effects of socio-economic characteristics on secularization differ between the specified approaches of secularization. The regression results show that: In both measures of secularization, the probability of being a secular person is more frequent for male than female complement. The figure is in line as one could expect, male are more secular than female counterpart. Findings of ample studies, for example, Loveland (2003) and Brañas-Garza and Neuman (2004) confirm that women are usually more religious compared to men complement. The effect of age is almost similar between the available approaches of secularization. Age has a negative effect on being a ‘non-member’; the probability of having a non-member form of secular trait decreases continuously with increasing age compared to the reference age category of 18-25. Also regarding ‘rare practice’ there is diminishing likelihood to be secular as age raises taking into account aforementioned reference age cluster.

Education seems to affect the tendency to become secular. The effect of education is also more pronounced: formal education (above and including elementary school) weighted against informal education decreases the probability being secular in terms of attendance and membership as well (Table 2). It is, most probably, because religious institution attendance has a social networking positive effect for educated individuals who use religion as a form of shared interaction (Glaeser and Sacerdote 2008). Usually, the ideal purpose for attendance is salvation. Conversely, there are loads of non-salvation causes for religious service attendance such as social drive to exchange various thoughts with fellow congregants (Monaghan 1967). The same can be relevant for religious institutions membership; there is probability of non-salvation intentions such as social belongingness and status. Additionally, formal education can increase

the level of diversity and number of religious denominations through promoting people to express their ideas and feelings. Since more people are able to get access to the religion and denomination of their preference or choice, certain indicators of religiosity, principally attendance and denomination can get augmented (Bruce 2006). Furthermore, the results of this study support hypothesis found on advantages of educated people in the kind of abstract thinking required for religion or faith (McCleary and Barro 2006). Generally, the result is not in line with the traditional view that higher education reduces religious attendance or membership.

As it is perceptible from Table 2, the effects of urbanization on the various aspects of secularization (rare-attendance and being non-member) are noticeably different. The bond between urbanization and secularization suggests different results when secularization is measured as participation compared to when it is measured as membership. Urbanization goes hand-in-hand with life advancement and/or a closely related aspect of economic development (McBride 2005). Urbanization is a physical growth in the urban areas because of, amongst other things, rural to urban migration and international immigration as well. Difference in life traditions between rural and urban areas confirms urbanization as a one potential determinant for secularization. The finding of this study proved that the probability of being a member of religious institutions reduces among urban residents compared to rural dwellers. This is associated to the usual presumption that people living in the rural areas have high levels of social ties that can avail membership experiences. On account of this attribute, people in rural areas are enforced to conform to their collective customs or standards which are replicated in terms of religiosity (Siegman, 1962). Additionally, the result of this study revealed that the likelihood of attending religious institutions is higher in urban areas than that of rural province. Urbanization went along with rural-urban migration and relevant in the argument of urbanization because it is one of the most important building blocks of urbanization processes. And adjustment to a new environment due to migration can bring challenges of its own. Therefore, in pursuit of better economic gain, a new life in a city environment can increase interest in attending religious institutions so as to encounter new interactions and opportunities.

Economic development or economic condition can be an important determinant of secularization, based on Marx's (1844) thesis "religion is opium of the people", the enhancement of material conditions possibly will trim down the need for religious support. Alongside of Marx

(1844), humans are essentially wary of insecurities. These insecurities such as poverty are argued to be the main driving forces for human beings to seek supernatural help (Norris and Inglehart, 2004). However, the existing and this study's empirical evidences are far from conclusive. As it can be seen from table 2 above, in contrast to education and urbanization, change in measures of income (the level of economic condition) is not significantly related to changes in attendance, confirming contemporary research studies at the county-level (Becker and Woessmann 2013) and at the city-level (Becker, Nagler and Woessmann 2017). The insignificant and positive point estimated for its coefficient casts doubt on the causal hypothesis that income adversely affected religiosity. On the contrary, this research work provided that the probability of having membership in religious institutions increases with better income or economic condition, sustaining the work of Guiso, Sapienza, and Zingales (2003) who found out that religious attachment are positively linked with economic attitudes.

Democracy is an important determinant of secularization for the reason that democracy can free people from the constraints of any form of religion as a whole. Alternatively, democracy can open doors or provide opportunities for non-traditional as well as traditional religions to develop and exercise freely. This cross-country data research suggested that those who are supporting democracy are less secular, implying democracy has made it possible for people to choose their beliefs. Democracy avails fertile ground for systems of belief to participate in the religious market and people are able to choose and have more choices over a range of beliefs, the probability that the population is getting more religious service increases. Supporting this argument, Opfinger (2011) has suggested that the increase of religious pluralism seem to increase the overall level of religiosity. To analyze whether religious denomination affect secularization, religion dummies applied. Allowing for Christian religion faction as a reference, the probability of attending religious institutions is higher for Muslims, and less likely for the 'Others (like Jews, Hindu, Buddhist, etc)' religion group. Additionally, as compared to Christians, Muslims and Others have lower probability to have membership in religious institutions (Table 2).

5.3 Robustness in Estimation Technique

In this section the robustness checks that the paper employed is to compare the logit-based coefficient estimates with coefficient estimates using probit approach, addressing concerns about

methods of estimation technique bias. Recall that the study used two alternatives of secularization reflections: rare practice and non-membership of religious institutions, the estimation results using probit are reported in Table 3 and 4 under the appendix part. The results are reasonably consistent across the two estimation techniques.

6 Conclusions

In spite of widespread academic arguments on the source of secularization, practical evidences from economics perspective have not been analyzed in the case of Africa so far. And so, the purpose of this paper has been to investigate the effect of development fundamentals on secularization in African context. Secularization is captured by two measures: rare-attendance and non- membership of any religious institutions. The empirical work of this study is based on a cross-section analysis derived from individual level data collected in the 6th round of Afrobarometer survey.

Estimation of the effect of education, urbanization and income on secularization, using Afrobarometer (2016) data, indicated that higher education, measured by high-school completed and post high-school graduated, is negatively associated with rare-attendance and non-membership. This result doesn't support the traditional view of secularization hypothesis that education furthered secularization. The negative association between education and secularization (rare-attendance and non-membership) signifies that education plays a significant role in social association or attachment. Such finding can assist policy-makers in determining strategies to improve social inclusion ventures. Applying rare-attendance approach of secularization, urbanization and secularization are adversely correlated. Due to rural-urban migration, which is the foundation of urbanization, interest in attending religious institutions can be augmented in order to exploit opportunities and interactions important for common socio-economic gain. However, the finding turned around when non-member type of secularization was employed. It confirms the usual presumption that rural residents compared to urban dwellers have high levels of social tie experiences such as membership in religious institutions.

In contrast to education and urbanization, change in measures of income (the level of economic condition) is not significantly associated to changes in religious institution attendance, supporting the findings of the topical studies at the county-level (Becker and Woessmann 2013)

and at the city-level (Becker, Nagler and Woessmann 2017). Conversely, religiosity measured in terms of membership tends to increase with income, suggesting the worth of social responsibility and interactions among relatively high income dwellers in Africa.

7 Limitations and Future Work

Self-assessed replies on one's own religious position may comprise heuristic biases that are unseen by the researcher. While the cross-sectional analyses this paper employed cast strong doubt on a causal interpretation of the simple associations, future researches should at least utilize panel data to control omitted (unobserved or miss-measured) variables. Due to the presence of unobserved heterogeneity, or omitted variables, and reverse causality emanated from the nature of the study and Afrobarometer dataset, there could be an endogeneity problem. And this problem prevents us from making causal claims. Modeling directly exogenous variations in explanatory variables or applying instrumental variable techniques can address the problem of endogeneity, thus we can develop a casual identification among the given variables. Moreover, if it is possible, better to investigate ways to conduct counterfactual analysis to boldly declare the main sources of secularization.

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Appendix

Table 3 Country Fixed-Effects Probit ‘rare-attendance’ Regression (Reporting Coefficients)

| Probit regression | | | Number of obs | = | 52596 | | |
|-----------------------------|--|-----------|---------------|--------|---------|----------------------|-----------|
| | | | LR chi2(47) | = | 7328.81 | | |
| | | | Prob > chi2 | = | 0.0000 | | |
| Log likelihood = -26532.475 | | | Pseudo R2 | = | 0.1214 | | |
| RarePractice | | Coef. | Std. Err. | z | P> z | [95% Conf. Interval] | |
| Gender | | | | | | | |
| male | | .2360438 | .012696 | 18.59 | 0.000 | .21116 | .2609275 |
| Age | | | | | | | |
| 26-65 | | -.0741111 | .0149769 | -4.95 | 0.000 | -.1034653 | -.044757 |
| over 65 | | -.0855499 | .0313991 | -2.72 | 0.006 | -.1470909 | -.0240088 |
| Education | | | | | | | |
| primary education | | -.1031861 | .020644 | -5.00 | 0.000 | -.1436476 | -.0627245 |
| secondary education | | -.1928457 | .0215668 | -8.94 | 0.000 | -.2351158 | -.1505756 |
| post secondary education | | -.1621927 | .0253675 | -6.39 | 0.000 | -.211912 | -.1124734 |
| Urbanization | | | | | | | |
| urban | | -.0716348 | .0140766 | -5.09 | 0.000 | -.0992245 | -.0440451 |
| EconomicCondition | | | | | | | |
| Intermediate | | .0127766 | .0170054 | 0.75 | 0.452 | -.0205535 | .0461066 |
| good | | .0059471 | .0151496 | 0.39 | 0.695 | -.0237455 | .0356397 |
| DemocracySupport | | | | | | | |
| neutral | | -.0381 | .0221509 | -1.72 | 0.085 | -.0815149 | .0053149 |
| yes | | -.1381006 | .0196214 | -7.04 | 0.000 | -.1765578 | -.0996434 |
| Religion | | | | | | | |
| Muslim | | -.1709912 | .0227485 | -7.52 | 0.000 | -.2155774 | -.126405 |
| Others | | .9898795 | .0212105 | 46.67 | 0.000 | .9483078 | 1.031451 |
| Country | | | | | | | |
| Benin | | -.506468 | .0607985 | -8.33 | 0.000 | -.625631 | -.3873051 |
| Botswana | | .1341543 | .0592637 | 2.26 | 0.024 | .0179996 | .2503089 |
| Burkina Faso | | -.7962055 | .0654235 | -12.17 | 0.000 | -.9244333 | -.6679778 |
| Burundi | | -.3292403 | .0617233 | -5.33 | 0.000 | -.4502158 | -.2082648 |
| Cameroon | | -.2277454 | .0598868 | -3.80 | 0.000 | -.3451214 | -.1103693 |
| Cape Verde | | .6431575 | .0593689 | 10.83 | 0.000 | .5267967 | .7595184 |
| Cote d'Ivoire | | -.4935074 | .0613382 | -8.05 | 0.000 | -.613728 | -.3732868 |
| Gabon | | -.120254 | .0601617 | -2.00 | 0.046 | -.2381687 | -.0023392 |
| Ghana | | -.2701162 | .0526416 | -5.13 | 0.000 | -.3732917 | -.1669406 |
| Guinea | | -1.312078 | .0830098 | -15.81 | 0.000 | -1.474774 | -1.149382 |
| Kenya | | -.5573122 | .0546047 | -10.21 | 0.000 | -.6643353 | -.450289 |
| Lesotho | | .4238313 | .0585556 | 7.24 | 0.000 | .3090644 | .5385981 |
| Liberia | | -.0084223 | .0590573 | -0.14 | 0.887 | -.1241725 | .1073278 |
| Madagascar | | -.0996665 | .0598054 | -1.67 | 0.096 | -.2168829 | .0175499 |
| Malawi | | -.3863612 | .0536278 | -7.20 | 0.000 | -.4914698 | -.2812525 |
| Mali | | -1.123669 | .0699662 | -16.06 | 0.000 | -1.260801 | -.9865383 |
| Mauritius | | -.8041577 | .0614639 | -13.08 | 0.000 | -.9246248 | -.6836906 |
| Morocco | | .5853715 | .0536083 | 10.92 | 0.000 | .4803012 | .6904418 |
| Mozambique | | .2012056 | .0510294 | 3.94 | 0.000 | .1011897 | .3012214 |
| Namibia | | .220245 | .0587117 | 3.75 | 0.000 | .1051721 | .3353179 |
| Niger | | -.3356358 | .0593998 | -5.65 | 0.000 | -.4520573 | -.2192143 |
| Nigeria | | -.595667 | .0533651 | -11.16 | 0.000 | -.7002608 | -.4910733 |
| São Tomé and Príncipe | | .0197724 | .059195 | 0.33 | 0.738 | -.0962477 | .1357924 |
| Senegal | | -1.064679 | .0744495 | -14.30 | 0.000 | -1.210597 | -.9187607 |
| Sierra Leone | | -.4593248 | .060029 | -7.65 | 0.000 | -.5769796 | -.3416701 |
| South Africa | | .0117275 | .0524592 | 0.22 | 0.823 | -.0910906 | .1145456 |
| Sudan | | -.0227789 | .0557561 | -0.41 | 0.683 | -.1320588 | .086501 |
| Swaziland | | -.3620386 | .060979 | -5.94 | 0.000 | -.4815552 | -.242522 |
| Tanzania | | -.2733401 | .0518078 | -5.28 | 0.000 | -.3748815 | -.1717987 |
| Togo | | -.4434682 | .0611562 | -7.25 | 0.000 | -.5633321 | -.3236044 |
| Tunisia | | .1507755 | .0551005 | 2.74 | 0.006 | .0427805 | .2587704 |
| Uganda | | -.2890192 | .0531955 | -5.43 | 0.000 | -.3932805 | -.184758 |
| Zambia | | -.882837 | .0661104 | -13.35 | 0.000 | -1.012411 | -.753263 |
| Zimbabwe | | -.3068952 | .0540724 | -5.68 | 0.000 | -.412875 | -.2009153 |
| _cons | | -.3003662 | .0539853 | -5.56 | 0.000 | -.4061754 | -.1945571 |

| Probit regression | | | | Number of obs | = | 52596 | |
|-----------------------------|--------------------------|-----------|-----------|---------------|-------|----------------------|-----------|
| | | | | LR chi2(47) | = | 8823.35 | |
| | | | | Prob > chi2 | = | 0.0000 | |
| Log likelihood = -32027.717 | | | | Pseudo R2 | = | 0.1211 | |
| NonMember | | Coef. | Std. Err. | z | P> z | [95% Conf. Interval] | |
| Gender | | | | | | | |
| | male | .0558315 | .0117364 | 4.76 | 0.000 | .0328286 | .0788343 |
| Age | | | | | | | |
| | 26-65 | -.1562724 | .0138831 | -11.26 | 0.000 | -.1834828 | -.1290611 |
| | over 65 | -.2725099 | .0296037 | -9.21 | 0.000 | -.3305322 | -.2144877 |
| Education | | | | | | | |
| | primary education | -.0215459 | .0190432 | -1.13 | 0.258 | -.0588698 | .015778 |
| | secondary education | -.064104 | .0196835 | -3.26 | 0.001 | -.1026829 | -.0255251 |
| | post secondary education | -.1052517 | .0235043 | -4.48 | 0.000 | -.1513192 | -.0591841 |
| Urbanization | | | | | | | |
| | urban | .1552299 | .012975 | 11.96 | 0.000 | .1297994 | .1806604 |
| EconomicCondition | | | | | | | |
| | Intermediate | -.0240272 | .0158942 | -1.51 | 0.131 | -.0551792 | .0071248 |
| | good | -.0802668 | .0138724 | -5.79 | 0.000 | -.1074563 | -.0530774 |
| DemocracySupport | | | | | | | |
| | neutral | -.0384664 | .0213047 | -1.81 | 0.071 | -.0802229 | .0032902 |
| | yes | -.0594928 | .0188114 | -3.16 | 0.002 | -.0963626 | -.0226231 |
| Religion | | | | | | | |
| | Muslim | .2660845 | .0193514 | 13.75 | 0.000 | .2281565 | .3040125 |
| | Others | .5144928 | .0207245 | 24.83 | 0.000 | .4738735 | .5551121 |
| Country | | | | | | | |
| | Benin | -.8429419 | .059238 | -14.23 | 0.000 | -.9590462 | -.7268375 |
| | Botswana | -1.087873 | .0605508 | -17.97 | 0.000 | -1.20655 | -.9691957 |
| | Burkina Faso | -.727883 | .0586788 | -12.40 | 0.000 | -.8428914 | -.6128746 |
| | Burundi | -.3009651 | .0613827 | -4.90 | 0.000 | -.4212731 | -.1806572 |
| | Cameroon | -.5526359 | .0595675 | -9.28 | 0.000 | -.6693862 | -.4358857 |
| | Cape Verde | -.4889397 | .0609988 | -8.02 | 0.000 | -.6084951 | -.3693842 |
| | Cote d'Ivoire | -.6662524 | .0588229 | -11.33 | 0.000 | -.7815433 | -.5509616 |
| | Gabon | -.4075269 | .060789 | -6.70 | 0.000 | -.5266711 | -.2883827 |
| | Ghana | -1.051373 | .0536884 | -19.58 | 0.000 | -1.1566 | -.9461456 |
| | Guinea | -.6205957 | .0582568 | -10.65 | 0.000 | -.7347769 | -.5064145 |
| | Kenya | -1.06097 | .0538979 | -19.68 | 0.000 | -1.166608 | -.9553325 |
| | Lesotho | -.4195272 | .0607614 | -6.90 | 0.000 | -.5386173 | -.300437 |
| | Liberia | -1.442915 | .0618454 | -23.33 | 0.000 | -1.56413 | -1.3217 |
| | Madagascar | -.2729263 | .0613599 | -4.45 | 0.000 | -.3931894 | -.1526631 |
| | Malawi | -1.586608 | .0556162 | -28.53 | 0.000 | -1.695613 | -1.477602 |
| | Mali | -.2585094 | .0605939 | -4.27 | 0.000 | -.3772713 | -.1397475 |
| | Mauritius | -.3005448 | .06148 | -4.89 | 0.000 | -.4210433 | -.1800463 |
| | Morocco | .1906951 | .0642289 | 2.97 | 0.003 | .0648088 | .3165815 |
| | Mozambique | -1.25667 | .0536428 | -23.43 | 0.000 | -1.361808 | -1.151532 |
| | Namibia | -.5927614 | .0601764 | -9.85 | 0.000 | -.7107048 | -.4748179 |
| | Niger | -.1352111 | .0612324 | -2.21 | 0.027 | -.2552244 | -.0151978 |
| | Nigeria | -1.082601 | .0522131 | -20.73 | 0.000 | -1.184936 | -.9802649 |
| | São Tomé and Príncipe | -1.149733 | .060581 | -18.98 | 0.000 | -1.268469 | -1.030996 |
| | Senegal | -1.141699 | .0575224 | -19.85 | 0.000 | -1.254441 | -1.028957 |
| | Sierra Leone | -1.737399 | .0606989 | -28.62 | 0.000 | -1.856367 | -1.618431 |
| | South Africa | -.7026815 | .0539882 | -13.02 | 0.000 | -.8084965 | -.5968665 |
| | Sudan | -.488013 | .0577728 | -8.45 | 0.000 | -.6012457 | -.3747804 |
| | Swaziland | -1.021558 | .060435 | -16.90 | 0.000 | -1.140008 | -.9031077 |
| | Tanzania | -.8107353 | .0526336 | -15.40 | 0.000 | -.9138952 | -.707 |